Hydrodynamics of the Doig Formation
Potential Extensive and Prolific Deep Basin Type Gas Play

Introduction
The Triassic Doig Formation, including the Doig Phosphate Beds, has over 809 bcf of raw recoverable gas reserves and 14.4 million barrels of recoverable oil reserves in northeastern BC (BC Oil and Gas Commission, 2007). The productive reservoirs consist of a regressive sequence of tight, generally fine-grained sandstones, siltstones and coquinas, from one to fifty metres thick. The Doig Phosphate is one of the most prolific source rocks in Western Canada, and is mature to overmature in the study area. Therefore, it is possible that the Doig contains a Deep Basin type gas system that has the potential to be as prolific as the underlying Montney.

Study Details
The study is based on logs, published literature and pressure data. Over 1,500 pressures were reviewed and approximately 400 quality drillstem tests and AOFs were selected.

Study Objectives
This study integrates pressure data with geology to define Doig hydrostratigraphy. The study objectives include:

- Identify the edge of the Doig unconventional gas system.
- Relate the hydrogeology to a log-based sequence stratigraphic model and determine gas migration/potential exploration trends.
- Present the detailed hydrostratigraphy for several Doig oil and gas pools and show how this could impact development drilling.
- Assess the thermal maturity of the Doig using temperature and wet gas index maps.

Deliverables
- Regional Geology – geological model
- Regional Hydrogeology – DST map, PE graph, head maps (2), pressure/depth map, hydrostratigraphic cross-sections (4)
- Geochemistry – temperature map, wet gas index map, Halfway water salinity map
- Technical Report – hard copy and digital formats
- Digital Database – pressures, water chemistry

» Detailed Geology – Doig structure and isopach maps (6) for the Fireweed/Buick/West Stoddart area
» Detailed Hydrogeology – pool montages (cross-section, head map, detailed PE graph and productions characteristics) for the Groundbirch, Kelly, Fireweed, West Stoddart and Buick areas (5)